

WHAT IS CLAIMED IS:

1. An in-line die attaching and curing apparatus for producing a multi-chip package (MCP), comprising:

5 at least one die attaching apparatus including:

an apparatus for supplying chip mounting frames;

an apparatus for guiding the movement of the chip mounting frame;

an apparatus for transferring the chip mounting frame onto the guiding apparatus;

10 an apparatus for providing wafers including a plurality of chips;

an apparatus for applying an adhesive to a chip mounting area of the chip mounting frame; and

a device for placing at least one of the plurality of the chips onto the chip mounting area; and

15 at least one adhesive curing apparatus including:

an apparatus including a plurality of adhesive curing zones for raising and lowering the curing temperature; and

an apparatus for transferring the chip mounting frame through the adhesive curing zones apparatus.

20 2. The apparatus of claim 1, which further includes at least two die attaching apparatuses.

3. The apparatus of claim 2, which said adhesive curing apparatus is located
25 between at least two die attaching apparatuses.

4. The apparatus of claim 1, wherein the heating zones apparatus includes a frame providing unit for providing the chip mounting frame thereto from the chip mounting frame guiding apparatus.

30 5. The apparatus of claim 1, wherein the heating zones apparatus includes a frame discharging unit for discharging the chip mounting frame.

6. The apparatus of claim 1, wherein apparatus for transferring the chip mounting frame comprises a transfer gripper apparatus.

7. The apparatus of claim 1, wherein the chip mounting frames are supplied from an insert-type magazine or a stack-type magazine.

8. The apparatus of claim 1, wherein the guiding apparatus comprises an index rail.

9. The apparatus of claim 1, wherein each die attaching apparatus further include a chip press device for compressing the chip during the adhesive curing thereof.

10. The apparatus of claim 1, wherein the adhesive curing apparatus includes adhesive curing units for heating and adhesive curing units for cooling the chip on the chip mounting area.

11. The apparatus of claim 1, wherein each die attaching apparatus further includes a UV radiation device for irradiating the wafer with UV rays.

12. The apparatus of claim 1, wherein each die attaching apparatus further includes a camera for observing the wafer by visual inspection.

13. The apparatus of claim 1, wherein the apparatus for applying adhesive is a liquid adhesive applying device applying a liquid adhesive to the chip mounting area of the chip mounting frame.

14. The apparatus of claim 1, wherein the apparatus for applying adhesive is an adhesive tape attaching device attaching an adhesive tape to the chip mounting area of the chip mounting frame.

15. The apparatus of claim 1, wherein the apparatus for supplying chip mounting frames is a loader.

16. The apparatus of claim 1, wherein the apparatus for providing wafers is a wafer loader.

5 17. The apparatus of claim 1, wherein the device for placing the chip on the chip mounting area is a pick and place device.

18. The apparatus of claim 1, further comprising a chip alignment table supporting the wafer.

10 19. The apparatus of claim 1, further comprising an unloader for transferring the chip mounting frame to a magazine.

20. A method for producing a multi-chip package (MCP), the method comprising:
15 supplying chip mounting frames;
providing wafers including a plurality of chips;
applying an adhesive to a chip mounting area of the chip mounting frame;
placing at least one of the plurality of the chips onto the adhesive on the chip mounting area,
providing a plurality of adhesive curing zones for raising and lowering the curing
20 temperature thereby lowering the adhesive curing time for adhering the chip on the chip mounting area; and
transferring the chip mounting frame through the adhesive curing zones and curing the adhesive thereby producing said MCP.

25 21. The method of claim 20, wherein the chip mounting frames are supplied from an insert-type magazine or a stack-type magazine.

22. The method of claim 20, which further comprises compressing the chip during the adhesive curing thereof.

30 23. The method of claim 20, which further comprises irradiating the wafer with UV rays.

24. The method of claim 20, which further comprises visually inspecting the wafer using a camera.

25. The method of claim 20, wherein applying an adhesive comprises applying a
5 liquid adhesive to the chip mounting area of the chip mounting frame.

26. The method of claim 20, wherein applying an adhesive comprises attaching an adhesive tape to the chip mounting area of the chip mounting frame.